

What is Claimed is:

- 32
1. A flooring system comprising:
- a subfloor;
- a decorative top layer;
- 5 a substrate having a top surface and an oppositely facing bottom surface, the bottom surface positioned proximate the subfloor and the top surface is positioned proximate the decorative top layer, the substrate having voids which extend between the top surface and the bottom surface, the substrate is manufactured from rubber in sheets which are cut to the desired configuration;
- 10 whereby the substrate has the strength characteristics to support the decorative layer and prevent damage thereto and the sound dampening characteristics to provide decibel reduction through the substrate.
2. The flooring system as recited in claim 1 wherein the density of the substrate is less than 1000 kilograms per meter cubed.
- 102 3. The flooring system as recited in claim 1 wherein the substrate has the strength characteristics required to support the decorative layer while having sufficient resiliency to allow the substrate to be delivered in rolls.
4. The flooring system as recited in claim 1 wherein the substrate is fixed to the subfloor by means of an adhesive.
- 20 5. The flooring system as recited in claim 1 wherein the substrate is fixed to the decorative top layer by means of an adhesive.
- 102 6. The flooring system as recited in claim 1 wherein the substrate is made from an SBR rubber material.

7. The flooring system as recited in claim 1 wherein the sound dampening characteristics exhibit a decibel reduction of approximately 20 dB for a substrate with a thickness of 5 mm.

8. A substrate for use in a flooring system which has a subfloor and a decorative upper layer, the substrate comprising:

a sheet having a bottom surface, a top surface, side surfaces and end surfaces, the top surface and the oppositely facing bottom surface are essentially parallel to each other and are spaced apart by the thickness of the substrate;

voids are provided in the substrate, the voids are provided between particles of rubber;

whereby when the substrate is positioned between the subfloor and the decorative top layer, the particles of rubber provide the strength required to prevent deformation of the substrate in the direction of the thickness and the voids contribute to the sound dampening characteristics required to provide decibel reduction across the thickness of the substrate.

9. The substrate for use in a flooring system as recited in claim 8 wherein the density of the substrate is less than 1000 kilograms per meter cubed.

10. The substrate for use in a flooring system as recited in claim 8 wherein the substrate has the strength characteristics required to support the decorative layer while having sufficient resiliency to allow the substrate to be delivered in rolls.

11. The substrate for use in a flooring system as recited in claim 8 wherein the substrate is made from an SBR rubber material.

12. The substrate for use in a flooring system as recited in claim 8 wherein the sound dampening characteristics exhibit a decibel reduction of approximately 20dB for a substrate with a thickness of 5 mm.

13. A substrate for use in a flooring system which has a subfloor and a decorative upper layer, the substrate comprising:

a continuous sheet having a bottom surface, a top surface, side surfaces and end surfaces, the top surface and the oppositely facing bottom surface are essentially parallel to each other and are spaced apart by the thickness of the substrate;

voids are provided in the substrate, the voids are provided between particles of material of the substrate, such that the particles of material provide the strength required to prevent deformation of the substrate in the direction of the thickness and the voids contribute to the sound dampening characteristics required to provide decibel reduction across the thickness of the substrate.

14. The substrate for use in a flooring system as recited in claim 13 wherein the continuous sheet is cut to the appropriate length to fit the space requirements.

15. The substrate for use in a flooring system as recited in claim 13 wherein the density of the substrate is less than 1000 kilograms per meter cubed.

16. The substrate for use in a flooring system as recited in claim 13 wherein the substrate has the strength characteristics required to support the decorative layer while having sufficient resiliency to allow the substrate to be delivered in rolls.

17. The substrate for use in a flooring system as recited in claim 13 wherein the substrate is fixed to the subfloor by means of an adhesive.

18. The substrate for use in a flooring system as recited in claim 13 wherein the substrate is fixed to the decorative upper layer by means of an adhesive.

19. The substrate for use in a flooring system as recited in claim 13 wherein the substrate is made from an SBR rubber material.

5 20. The substrate for use in a flooring system as recited in claim 13 wherein the sound dampening characteristics exhibit a decibel reduction of approximately 20dB for a substrate with a thickness of 5 mm.

1, 2, 21. A substrate for use in a flooring system which has a subfloor and a decorative upper layer, the substrate comprising:

16 a sheet having a bottom surface, a top surface, side surfaces and end surfaces, the top surface and the oppositely facing bottom surface are essentially parallel to each other and are spaced apart by the thickness of the substrate;

voids are provided in the substrate, the voids are provided between particles of the sheet. the sheet has a density of less than 1000 kilograms per meter cubed;

whereby when the substrate is positioned between the subfloor and the decorative top layer, the particles provide the strength required to prevent deformation of the substrate in the direction of the thickness and the voids contribute to the sound dampening characteristics required to provide decibel reduction across the thickness of the substrate.

3 22. The substrate for use in a flooring system as recited in claim 21 wherein the substrate has the strength characteristics required to support the decorative layer while having sufficient resiliency to allow the substrate to be delivered in rolls.

6 23. The substrate for use in a flooring system as recited in claim 21 wherein the substrate is made from an SBR rubber material.

24. The substrate for use in a flooring system as recited in claim 21 wherein the sound dampening characteristics exhibit a decibel reduction of approximately 20dB for a substrate with a thickness of 5 mm.